

Automation can be the answer to a whole host of manufacturing and operations questions. But deciding what, how and when to automate is not straightforward, says Liz Salter at IfM Engage.



Liz Salter, IfM Engage

The benefits to using automation in manufacturing often outweigh the challenges, especially when it can increase efficiency and production and help manufacturers to be more competitive. But if you're a business that thinks you are ready to automate, it is wise to step carefully. Thinking through the process of automation and its impact beforehand, and exploring the potential downsides, means you will be able to make better informed decisions and save yourself a host of issues later down the line. People are often keen to shout about the benefits of automation and hear them describe 'quick wins' or 'low-hanging fruit' but longer-term direction that will have significant impact needs deep consideration.

Yes, there are some classic benefits such as reduced labour costs, increasing consistency of processes and increased production rates but there are also many challenges that should be considered when implementing automation on the factory floor. Some of these concerns include deciding what to automate, finding skilled employees and the impact on your existing processes.

Feasibility

Consider how likely a solution is to succeed. There are many kinds of digital solutions available on the market today, with many solution providers ready to compete for your custom. Making a list of your short- and long-term needs and identifying automation solutions that match them is a sensible first step which will help you ensure you're meeting a need which actually exists. [The Digital Manufacturing on a Shoestring project, based at the IfM](#), is a good place to start if you're a small- to medium-sized company looking for low-cost off-the-shelf solutions. We can help you to identify a process or a part of production to automate that doesn't cost the earth and allows you to try out small-scale digital solutions that won't disrupt your core operations.



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Machines vs humans

Machines may be efficient, but they don't have the versatility or creativity of human beings. It doesn't take much to mean they stop working properly, whereas human workers can apply ingenuity and imagination to get around the problem. Be wary of costly machines that do a highly specific job. If production were to shift, a human worker is more adaptable than a large piece of kit that no longer fits into your plans.

Implementation challenges

Don't underestimate the implementation challenges that come along with automation. It's crucial to consider the job that workers are currently doing. More often than not, the job includes subtleties such as detailed quality checking which won't be able to be done via automation. Think carefully about what the job involves and the value which is added by a human being. Most people aren't lucky enough to work off a green field site but have an existing factory, so it's also important to look at existing legacy equipment and kit to work out how well, or not, automation systems can integrate.

Impact on current processes It's important to consider the effect of automation on your current processes. Ask yourself: How will automation impact your product?

And what will your customers think? Automation involves the same task being done on repeat so there is naturally a level of product personalisation that cannot be achieved in the same way.

Skills and maintenance

The reliance on automation creates more demand for skilled maintenance and service technician jobs. For example, when equipment runs into problems, it needs to be back up and running as quickly as possible. Do you have access to these skills, and the resources to fund them?

Automated equipment can involve a high level of cost and can sometimes require a higher level of maintenance than with a manually operated machine. The cost of developing and deploying both the hardware and the software for automation should be considered. Do you have the in-house expertise to understand the products and processes?

Implementing automation successfully It is never too early to consider the potential automation can offer you and your business. But preparing for and considering some of the challenges posed by automaton will require consideration of the entire business processes, as well as the culture of the whole organisation.



At IfM Engage, our tried and tested automation assessment tool, backed by research from the Institute for Manufacturing at the University of Cambridge and applied by industry experts, is helping manufacturers make confident manufacturing automation decisions. This supports company decision-making and helps firms take the longer-term view of automation.

Liz Salter, Industrial Associate, IfM Engage will be hosting a masterclass at Digital Manufacturing Week on 'Making the right automation investment decisions' on Wednesday 10 November. The session will introduce a systematic approach to decision making and show how this informs good equipment sourcing choices.

[Find out more about how IfM Engage can help you consider your automation investment decisions.](#)

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